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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/768,934
Filing Date: February 02, 2004
Appellant(s): BEHERA ET AL.

Patrick C. Keane
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 28th, 2008, appealing from the Office action mailed February 2nd, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The Appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The Appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal:

Beaudoin et al. (U.S. PGPub 2003/0112958) filed on December 26th, 2001, and published on June 19th, 2003 (hereinafter "*Beaudoin*").

Gupta et al. (U.S. Patent 7,330,859) filed on September 10th, 2003, and issued on February 12th, 2008 (hereinafter "*Gupta*").

Galand et al. (U.S. Patent 6,038,212) filed on October 7th, 1997, and issued on March 14th, 2000, (hereinafter "*Galand*").

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. Claims 9-14, 16, 17, 22, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by *Beaudoin et al.* (U.S. PGPub 2003/0112958).

2. As per claims 9 and 22, *Beaudoin* teaches a method for managing a network using a plurality of databases, the method comprising:

discovering the network; updating a topology representation of the network in a working database based on the discovering; (*Beaudoin*, paragraphs 0027-0029 and fig. 4, where the network topology representation is created or updated)

simultaneous with the discovering and the updating, providing access to a topology representation of the network in an active database; and (*Beaudoin*, paragraphs 0027, 0028, fig. 4's structure, and paragraph 0032, where the topology data is described, e.g., in paragraph 0027-0029 and is shown, e.g., in figs. 2-6)

exchanging connections of the working and active databases (*Beaudoin*, paragraphs 0028, 0032, and 0033, where the system selects the second database as active).

3. As per claims 10 and 23, *Beaudoin* teaches the system further comprising: repeating the discovering, updating, providing, and exchanging (*Beaudoin*, paragraphs 0027-0029, where the processes are all repeated).

4. As per claim 11, *Beaudoin* teaches the system further wherein the exchanging is performed upon completion of the discovering of the network and updating the topology representation (*Beaudoin*, paragraphs 0028, 0032, and 0033, where the system selects the second database as active).

5. As per claim 12, *Beaudoin* teaches the system further comprising partitioning a topology database to form the working database and the active database (*Beaudoin*, paragraphs 0030 and 0032, e.g., where the data is partitioned into "sets" when forming the databases).

6. As per claim 13, *Beaudoin* teaches a system for managing a network using a plurality of databases, the system comprising:

means for discovering a topology of the network and updating a topology of the network in a first database connected to the means for discovering; and (*Beaudoin*, paragraphs 0027, 0028, fig. 4's structure, and paragraph 0032, where the topology data is described, e.g., in paragraph 0027-0029 and is shown, e.g., in figs. 2-6)

means for connecting the means for discovering to the first database while at the same time connecting clients to a second database containing a topology of the network, and (*Beaudoin*, paragraphs 0028, 0030, and 0032 using the structure of fig. 4)

for connecting the clients to the first database after the means for discovering updates the topology of the network (*Beaudoin*, paragraphs 0027, 0028, 0032, and 0033, and fig. 1, where the clients access the first database).

7. As per claim 14, *Beaudoin* teaches the system further wherein the means for connecting exchanges connections of the first and second databases among the means for discovering and the clients after the means for discovering completes discovery of the network (*Beaudoin*, paragraphs 0028, 0032, and 0033, where the system selects the second database as active after determining network layout 3 of fig. 1).

8. As per claim 16, *Beaudoin* teaches the system further comprising means for monitoring a health of the network based on the network topology in the second database (*Beaudoin*, paragraph 0035, 0044, and 0051 where the health and other network statistics are monitored).

9. As per claim 17, *Beaudoin* teaches the system further comprising means for detecting a fault in the network, comparing the topologies in the first and second databases, and determining a source of the fault based on the comparing (*Beaudoin*, e.g., in paragraphs 0035, 0044, 0045, where topology comparisons are utilized).

Claim Rejections - 35 USC § 103

10. Claims 1-3, 5-8, 18, 19, 21, and 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Beaudoin et al.* (U.S. PGPub 2003/0112958) and *Gupta et al.* (U.S. Patent 7,330,859).

11. As per claims 1 and 18, *Beaudoin* teaches a method for managing a network using a plurality of databases, the method comprising:

selecting a first one of the plurality of databases that contains a topology of the network, as an active database that is accessible for providing information related to the topology of the network in READ only mode; (*Beaudoin*, paragraphs 0027, 0028, fig. 4's structure, and paragraph 0032, where the topology data is described, e.g., in paragraph 0027-0029 and is shown, e.g., in figs. 2-6)

selecting a second one of the plurality of databases that contains a topology of the network, as a working database for receiving topology updates; (*Beaudoin*, paragraphs 0028, 0030, and 0032 using the structure of fig. 4)

discovering a topology of the network, and updating the second database with the discovered topology; and selecting the second database as the active database (*Beaudoin*, paragraphs 0028, 0032, and 0033, where the system selects the second database as active).

While *Beaudoin* teaches the use of an active database that is accessible for providing information related to the topology of the network, *Beaudoin* fails to teach providing an active database in READ only mode.

Gupta teaches a system with a first and second database in a network system (*Gupta*, col. 2, line 62 to col. 3, line 29) that uses a READ only mode to make a database inaccessible for client data updates (*Gupta*, col. 6, lines 4-20; see also col. 1, lines 30-51).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined *Beaudoin* and *Gupta* to provide the read-only access of *Gupta* in the system of *Beaudoin*, because read-only access enables reliability and robustness in the cause of alternate database failure by providing data access without creating contention issues (*Gupta*, col. 1, lines 30-51).

12. As per claim 2, *Beaudoin-Gupta* teaches the system further wherein before discovering the topology of the network, the active database and the working database contain identical topologies of the network (*Beaudoin*, paragraphs 0027-0029 and 0032).

13. As per claims 3 and 19, *Beaudoin-Gupta* teaches the system further comprising: selecting the first database as the working database; discovering a topology of the network, and updating the first database with the discovered topology; and selecting the

first database as the active database (*Beaudoin*, paragraphs 0027, 0028, fig. 4's structure, and paragraph 0032).

14. As per claims 5 and 21, *Beaudoin-Gupta* teaches the system further comprising: monitoring a health of the network during the discovering based on the network topology in the active database (*Beaudoin*, paragraph 0035, 0044, and 0051 where the health and other network statistics are monitored).

15. As per claim 6, *Beaudoin-Gupta* teaches the system further wherein the discovering returns a connectivity of the network (*Beaudoin*, paragraph 0035).

16. As per claim 7, *Beaudoin-Gupta* teaches the system further wherein the discovering returns a Layer 2 connectivity of the network (*Beaudoin*, paragraph 0035).

17. As per claim 8, *Beaudoin-Gupta* teaches the system further comprising:

detecting a fault in the network; comparing the topologies in the working and active databases; determining a source of the fault based on the comparing (*Beaudoin*, e.g., in paragraphs 0035, 0044, 0045, where topology comparisons are utilized).

18. As per claim 24, *Beaudoin* teaches a method for managing a network using a plurality of databases, the method comprising:

connecting a first one of the plurality of databases that contains a topology of the network, as an active database accessible by clients for providing information related to the topology of the network in a READ only mode; connecting a second one of the plurality of databases that contains a topology of the network, as a working database for receiving topology updates; (*Beaudoin*, paragraphs 0028, 0030, and 0032 using the structure of fig. 4)

discovering a topology of the network, and updating the working database with the discovered topology; (*Beaudoin*, paragraphs 0027, 0028, fig. 4's structure, and paragraph 0032, where the topology data is described, e.g., in paragraph 0027-0029 and is shown, e.g., in figs. 2-6)

connecting the working database as the active database; and connecting one of the plurality of databases as the working database, wherein the database connected as the active database and the database connected as the working database are different databases (*Beaudoin*, paragraphs 0028, 0032, and 0033, where the system selects the second database as active and all databases are different).

While *Beaudoin* teaches the use of an active database that is accessible for providing information related to the topology of the network, *Beaudoin* fails to teach providing an active database in READ only mode.

Gupta teaches a system with a first and second database in a network system (*Gupta*, col. 2, line 62 to col. 3, line 29) that uses a READ only mode to make a database inaccessible for client data updates (*Gupta*, col. 6, lines 4-20; see also col. 1, lines 30-51).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined *Beaudoin* and *Gupta* to provide the read-only access of *Gupta* in the system of *Beaudoin*, because read-only access enables reliability and robustness in the cause of alternate database failure by providing data access without creating contention issues (*Gupta*, col. 1, lines 30-51).

19. As per claim 25, *Beaudoin-Gupta* teaches the system further comprising: repeating the discovering of the network and the updating of the working database, the connecting of the working database as the active database, and the connecting of one of the plurality of databases as the working database (*Beaudoin*, paragraphs 0027-0029, where the processes are all repeated).

20. As per claims 26 and 29, *Beaudoin-Gupta* teaches the system further wherein selecting the second database as the active database comprises exchanging connections of the first database and second database (*Beaudoin*, paragraphs 0028, 0032, and 0033, where the system selects the second database as active).

21. As per claims 27 and 30, *Beaudoin* teaches the system further wherein the active database is inaccessible for updating the topology representation of the network.

While *Beaudoin* teaches the use of an active database that is accessible for providing information related to the topology of the network, *Beaudoin* fails to teach providing an active database in READ only mode.

Gupta teaches a system with a first and second database in a network system (*Gupta*, col. 2, line 62 to col. 3, line 29) that uses a READ only mode to make a database inaccessible for client data updates (*Gupta*, col. 6, lines 4-20; see also col. 1, lines 30-51).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined *Beaudoin* and *Gupta* to provide the read-only access of *Gupta* in the system of *Beaudoin*, because read-only access enables reliability and robustness in the cause of alternate database failure by providing data access without creating contention issues (*Gupta*, col. 1, lines 30-51).

22. As per claim 28, *Beaudoin* teaches the above, yet fails to teach wherein a database is inaccessible for updating the topology of the network when it is connected to the client.

While *Beaudoin* teaches the use of an active database that is accessible for providing information related to the topology of the network, *Beaudoin* fails to teach providing an active database in READ only mode.

Gupta teaches a system with a first and second database in a network system (*Gupta*, col. 2, line 62 to col. 3, line 29) that uses a READ only mode to make a database inaccessible for client data updates (*Gupta*, col. 6, lines 4-20; see also col. 1, lines 30-51).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined *Beaudoin* and *Gupta* to provide the read-only

access of *Gupta* in the system of *Beaudoin*, because read-only access enables reliability and robustness in the cause of alternate database failure by providing data access without creating contention issues (*Gupta*, col. 1, lines 30-51).

23. Claims 4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Beaudoin et al.* (U.S. PGPub 2003/0112958) and *Gupta et al.* (U.S. Patent 7,330,859), further in view of *Galand et al.* (U.S. Patent 6,038,212).

24. As per claims 4 and 20, *Beaudoin-Gupta* teaches the above, including moving between working and active databases (*Beaudoin*, paragraphs 0028-0035), yet fails to teach the system further comprising: selecting a third one of the plurality of databases as the working database; discovering a topology of the network, and updating the third database with the discovered topology; and selecting the third database as the active database.

Galand teaches a method of using a large number of topology databases in a data communications network to enable topology mapping and network management (*Galand*, see fig. 5 topology database structure, col. 9, lines 9-28, and col. 10, line 33 to col. 11, line 4).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined *Beaudoin* and *Galand* to provide the database techniques of *Galand* in the system of *Beaudoin*, because doing so would enable improved performance through minimizing the processing time necessary to update a

small number of topology databases (*Galand*, col. 2, lines 45-53). One of ordinary skill in the art would further be motivated to use the techniques taught in *Galand* to increase the fault-tolerance and network stability by large plurality of topology database storage alternatives (see *Galand*, col. 5, lines 8-11).

25. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beaudoin et al.* (U.S. PGPub 2003/0112958) and *Galand et al.* (U.S. Patent 6,038,212).

26. As per claim 15, *Beaudoin* teaches the above, including moving between working and active databases (*Beaudoin*, paragraphs 0028-0035), yet fails to teach the system further wherein after the means for discovering completes discovery of the network, the means for connecting reconnects the clients from the second database to the first database and connects the means for discovering to a third database.

Galand teaches a method of using a large number of topology databases in a data communications network to enable topology mapping and network management (*Galand*, see fig. 5 topology database structure, col. 9, lines 9-28, and col. 10, line 33 to col. 11, line 4).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined *Beaudoin* and *Galand* to provide the database techniques of *Galand* in the system of *Beaudoin*, because doing so would enable improved performance through minimizing the processing time necessary to update a small number of topology databases (*Galand*, col. 2, lines 45-53). One of ordinary skill

in the art would further be motivated to use the techniques taught in *Galand* to increase the fault-tolerance and network stability by large plurality of topology database storage alternatives (see *Galand*, col. 5, lines 8-11).

(10) Response to Argument

In the Argument, Appellant argued in substance that

(**A**)(**i**) *Beaudoin* fails to teach exchanging connections of the working and active databases as described in claims 9-12 and 22-23. The connections between the local and global databases in *Beaudoin* are static and do not change. Further, a client changing connections between databases in *Beaudoin* does not constitute "exchanging connections of the working and active databases," because the Appellant's invention is directed to exchanging connections only between databases.

As to point (**A**)(**i**), the claim language requires only that a "connection" is "exchanged" between a working and an active database. *Beaudoin* teaches a global working database that receives and stores updates to a network topology representation (paragraph 0030). Further, *Beaudoin* teaches a local active database that contains an accessible partition of the topology representation while the global working database is being updated (paragraph 0032).

Beaudoin teaches that the connections between the two databases are often exchanged. For example, a client will connect to the global working database and request that certain operations be performed (e.g., selecting a partition of the network topology mapping to analyze), after which the connection is exchanged to the local active database to work on the selected partition (see paragraph 0028, where the

network manager creates an information set for the local database from the global database, followed by connectivity switching described in 0030, 0032, and 0033). Given a broadest reasonable interpretation of the language as claimed, moving a connection between a first and second database source would reasonably read on the limitation of “exchanging” a connection.

(**A**)(**ii**) *Beaudoin* fails to teach dependent claim 12 that recites partitioning a database to form the working database and active database. The local and global databases in *Beaudoin* are not partitioned from the same database.

As to point (**A**)(**ii**), *Beaudoin* teaches creation of a working global database and an active local database. These databases are created using “subsets,” which are equivalent to the creation of “partitions” (see paragraph 0030 where the incoming data is received and paragraph 0032 where a "subset / snapshot" of the information contained in the global database is used for partitioning the database; see also Appellant's description on pg. 6 of the Appeal Brief).

(**A**)(**iii**) *Beaudoin* fails to teach connecting the clients to the first database after the means for discovering updates the topology of the network as claimed in claim 13. *Beaudoin* fails to teach connecting clients to the global database after the data collector updates the topology of the network.

As to point (**A**)(**iii**), the *Beaudoin* discloses that the client views a working subset of the network topology in the local "second" database in order to view and work with a more manageable amount of data (see paragraph 0028 client interface overview). While connected to the second database, the global "first" database is updated in "substantially real time" (paragraph 0030). Periodically, after the discovering means updates the first database, the client will connect to that first database in order to select new and more recent topology data to work with (see the process of user interaction described in fig. 7 and paragraph 0045, where the client is connected to the global first database after being connected to the local second database).

(**B**)(**i**) The combination of *Beaudoin* and *Gupta* does not teach an active database that is in a READ only mode while another receives topology updates.

As to point (**B**)(**i**), as explained above in (**A**)(**i**) *Beaudoin* teaches a local active database that provides accessible network topology information. *Beaudoin* teaches a tool that is primarily used for network topology visualization and display (see general interface described in paragraphs 0029 and 0045). Thus, the system reads topology information from the active database and provides customizable and dynamic information display features (see, e.g., overlay view functions of paragraph 0051).

When providing these features, *Beaudoin*'s local active database is not modified while the needed information is retrieved from the database and manipulated in the graphical user interface. However, the "READ only mode" of the claim language

requires more than a mere lack of modification as a READ only database is term of art that is explicitly protected from write modifications. *Gupta* teaches a system with a first and second database in a network system (*Gupta*, col. 2, line 62 to col. 3, line 29) that uses a READ only mode to make a database inaccessible for client data updates (*Gupta*, col. 6, lines 4-20; see also col. 1, lines 30-51). Appellant appears argue against a theoretical combination of the two systems that would fail to function in a similar way, however, *Gupta* was cited only as teaching READ only database functionality.

(**B**)(**ii**) *Beaudoin* fails to teach dependent claim 8 that recites detecting a fault in the network, comparing the topologies in the working and active databases, and determining the source of the fault based on the comparing.

As to point (**B**)(**ii**), *Beaudoin* teaches a network management system that includes detecting faults in the network (see, e.g., paragraph 0035 "alarm conditions", "performance" and "service alarm" detection). This includes alarm conditions (i.e. problems or faults in the network) that are detected by comparing topology information in both databases and determining fault source information based on the comparison (see paragraphs 0041 and 0046 for information on alarms from fault detection; where the alarm fault information derives from network groups that are pulled from a comparison of both databases in paragraph 0045 and fig. 7).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this Examiner's answer.

Respectfully submitted,

/N. T./

Examiner, Art Unit 2141

Conferees:

/Jason D Cardone/
Supervisory Patent Examiner, Art Unit 2145

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